

Extraction and characterization of chitosan from shrimp shell waste in Sabah

Abstract

Chitin is the most widespread renewable natural sources following cellulose and the main source of chitin is crustacean waste. Chitosan which is a derivative of chitin after the process of deacetylation has multiple of commercial and possible medical uses based on its degree of deacetylation. This research aims to study the production of chitosan from shrimp shell waste in Sabah and characterize the chitosan quality which includes parameters including moisture content, solubility, and degree of deacetylation (DDA). The results obtained from this study show that moisture content ranged from 4-7%, while the solubility of chitosan achieved up to 90%. The DDA value obtained was high ranged from 70- 85%. Based on these three characteristics, shrimp shell waste in Sabah can achieved chitosan standard quality for industrial application by performing traditional method of deproteination, demineralization and deacetylation.